

Final Supplemental Environmental Impact Report 3 for

METRO GOLD LINE

Evaluating Relocation of the
San Dimas Station
Parking Facility

FOOTHILL EXTENSION

Azusa to Montclair (SCH No. 2010121069)

July 2022

APPENDIX A:

SEIR 3 Transportation Technical Memorandum



Foothill Gold Line

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Subject **Transportation Technical Memorandum for Supplemental Environmental Impact Report (SEIR) 3**

Project **Foothill Gold Line Extension Project Phase 2B (Azusa to Montclair)**

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The purpose of this memorandum is to document the findings and conclusions of the transportation system evaluation performed to assess the project modifications (Project Modification) proposed by the Los Angeles Metropolitan Transportation Authority (Metro) Gold Line Foothill Extension Construction Authority (Construction Authority) to the Foothill Gold Line Extension Project Phase 2B (Azusa to Montclair). This memorandum focuses on changes to the traffic analysis included in 2021 Supplemental EIR (SEIR 2). The SEIR 2 traffic analysis is included in **Attachment A**. The findings and conclusions in this memorandum will be used to develop the Transportation Section of the Supplemental Environmental Impact Report (SEIR) 3.

The Construction Authority proposes to modify the location for the parking facility in the city of San Dimas. Parking for the San Dimas Station would be relocated from the location approved in SEIR 2 to a new location south of the project right-of-way (ROW) between Monte Vista Avenue and San Dimas Avenue. The proposed new location is currently used as the San Dimas Park & Ride lot for Foothill Transit. The proposed new location would be redeveloped to accommodate the same number of parking spaces as identified for the approved parking location. The Construction Authority also proposes new roadway and pedestrian access to the San Dimas Station. The approved parking facility assessed in SEIR 2 was located two blocks east along Arrow Highway, south of the project ROW and west of Walnut Avenue. No modifications are proposed for the parking facilities at the Glendora, La Verne, Pomona, Claremont, and Montclair stations. All other project features are unchanged from SEIR 2.

1. Methodology

This section describes the methodology for travel demand forecasting, study area determination, vehicle-miles traveled (VMT) analysis, and traffic operational analysis. Results of the methodology application are summarized in the subsequent subsections.

1.1 Regional Forecasting

Metro’s “Measure R” regional travel demand model was applied for the forecasting analysis in SEIR 2. The travel demand model used to prepare ridership forecasts in SEIR 2 incorporates changes to the initial model used for the 2013 Final Environmental Impact Report (FEIR) and reflecting the change in number of parking spaces in the proposed surface lots included as part of SEIR 2. The model was used to develop a ridership forecast for the full construction of the build alternative (to Montclair). The Project Modification would not result in updating the travel demand model since the number of parking spaces in the proposed surface lots for all the stations are consistent with the number of parking spaces included in SEIR 2.

1.2 Project Modification Study Area Determination

Table 1 is a summary of the intersections used in the evaluation of the Project Modification. The study area was determined by reviewing the travel patterns from the model output. There are six intersections that would have a different travel pattern due to the Project Modification. The analysis in SEIR 2 included 24 intersections for the San Dimas station. The travel patterns are anticipated to be unchanged for the other 18 intersections, so there would be no change to the analysis. **Table 1** is a summary of the intersections used in the evaluation of the Project Modification.

Table 1: Project Modification Study Area Intersections

Number	Study Area Intersection
38	San Dimas Avenue / Bonita Avenue
39	San Dimas Avenue / Arrow Highway
40	Walnut Avenue / Bonita Avenue
41	Walnut Avenue / Arrow Highway
202	San Dimas Avenue / Railway Street
203	San Dimas Avenue / Commercial Street

Note: The numbering system has been retained from SEIR 2 for consistency.

Due to the new location of the San Dimas station parking facility, vehicles travelling to and from the station may potentially use local streets west of the parking facility such as Cataract Avenue, Railway Street and Commercial Street. The volume of trips using these streets is expected to be minimal since these are residential streets. Typically, drivers would use major streets such as San Dimas Avenue and would choose a more direct route to the station parking facility.

1.3 Vehicle-Miles Traveled (VMT)

The VMT analysis for the Project Modification is consistent with the analysis conducted in SEIR 2. Based on Section 15064.3 of the CEQA Guidelines, the project is “presumed to cause less-than-significant impact on transportation”. This presumption of less-than-significant impact suggest that detailed VMT analysis is not required for the Metro Gold Line Foothill Extension. However, to confirm that assumption, the analysis for SEIR 2 used the Measure R travel demand model to assess whether the change in parking spaces for SEIR 2 would reduce VMT. The assessment was conducted on a regional level. It is appropriate to assess

VMT at a regional level because the purpose of using VMT as a measure of transportation impacts is to assess the extent to which a project (or as here the Project Modification) would reduce or increase regional travel and thus regional GHG emissions.

The Project Modification would not result in changes to the SEIR 2 VMT analysis. The regional forecast from the travel demand model would not change since the number of parking spaces for all the stations are consistent with SEIR 2. The change in the travel pattern due to the relocation of the San Dimas station surface lot would not affect the regional travel pattern. The surface lot is located within two blocks each of the SEIR 2 surface lots. Therefore, the SEIR 2 VMT evaluation would be the same for the Project Modification.

1.4 Traffic Operations Analysis

Traffic operations analysis was performed using the same methodology used in SEIR 2. The year 2035 was retained as the Project planning horizon for the Project Modification, consistent with SEIR 2. Signalized intersection delay was evaluated, and LOS was based on the overall intersection average delay. For all-way, stop-controlled (unsignalized) intersections, the overall intersection delay and LOS were reported. For one-way or two-way stop-controlled intersections, the delay and LOS for the worst approach were reported. LOS and delay were calculated using the Highway Capacity Manual (HCM) 2000 report outputs from Synchro. At some intersections, limitations of the HCM 2000 methodology were encountered. For those intersections, HCM 2010 methodologies were used for reporting.

SEIR 2 used Los Angeles County thresholds, which evaluate impacts of a project as compared to the future No Build condition for determining the impacts of the Project Modification. The methodology is based on the *Los Angeles County Traffic Impact Study Guidelines* (County of Los Angeles, 1997). Using that methodology, an intersection is considered to have significant impacts if the change in delay from the No Build scenario is equal to or greater than the values shown in **Table 2**.

Table 2: Los Angeles County Intersection Impact Thresholds

Control Type	Final LOS with Project	Increase in Delay from No Build (seconds/vehicle)
Unsignalized	C	4 or more
	D	2 or more
	E/F	1.5 or more
Signalized	C	6 or more
	D	4 or more
	E/F	2.5 or more

Source: Los Angeles County, 1997

The December 2018 revisions to the CEQA Guidelines eliminate intersection delay as a CEQA impact criterion. However, LOS and delay were used in the traffic operational analysis to allow an “apples to apples” comparison of the traffic operations for the Project Modification against the traffic operations for the Approved Project, as compared to the No Build scenario.

1.4.1 No Build Alternative

The No Build scenario that was studied in SEIR 2 was retained for the Project Modification analysis. For SEIR 2, the No Build scenario was updated from the 2013 FEIR No Build scenario to include updated information regarding lane geometrics and phasing of intersection signals since the completion of the 2013 FEIR.

1.4.2 SEIR 2 Build Alternative

The SEIR 2 Build Alternative includes all the intersection geometry and signal timing details from the 2013 FEIR Build including model and lane geometric updates. At the intersections around the Glendora, San Dimas, La Verne, Claremont, and Montclair stations, the traffic forecasts for this alternative were updated to reflect the change in travel patterns and ridership as the result of the reduced parking capacities. At the intersections around the Pomona station, new trip generation, trip distribution, and trip assignment was conducted, based on the new location of the parking lot facility and the updated parking spaces available.

1.4.3 Project Modification Build Alternative

The Build Alternative for the Project Modification includes all the intersection geometry and signal timing details from the SEIR 2 Build Alternative. At six San Dimas study intersections, travel patterns in the vicinity of the station were updated to reflect the new parking location. No modifications are proposed for the parking facilities at the Glendora, La Verne, Pomona, Claremont, and Montclair stations resulting in no changes to the study intersection analysis for those parking facilities.

1.4.4 Project Modification Build Alternative for Phases 1 and 2

Build Alternative Phases 1 and 2 for the Project Modification include all the intersection geometry and signal timing details from SEIR 2. At the six intersections near the San Dimas station, travel patterns changed due to the new parking location in the same way as the full Build Alternative. No changes to the travel patterns at the other intersections analyzed in SEIR 2 are expected. The forecasted traffic for the full Build Alternative is 362 automobile trips per day. The forecast for Build Alternative Phase 1 is 378 vehicles per day and the forecast for Build Alternative Phase 2 is 381 vehicles per day. Because the difference between the full Build Alternative and the Build Alternative Phases 1 and 2 is minimal (within 5%), it is expected that the traffic operations for the three scenarios would be similar. Therefore, separate analysis was not conducted for the Build Alternative Phases 1 and 2.

2. Regional Forecasting Results

The regional forecast used for SEIR 2 was retained for the Project Modification analysis. No changes to the regional forecast are expected for the Project Modification. **Table 3** is a summary of the projected ridership at each proposed station for the full Build Alternative, Build Alternative Phase 1, and Build Alternative Phase 2.

Table 3: Projected Ridership

Projected Ridership			
Station	Build Alternative	Build Alternative Phase 1	Build Alternative Phase 2
Glendora	1,663	1,739	1,658
San Dimas	1,484	1,479	1,459
La Verne	1,793	1,929	1,839
Pomona	3,414	5,757	3,984
Claremont	2,371	-	4,278
Montclair	6,479	-	-
Total	17,203	10,904	13,217

Source: AECOM, 2020; WSP, 2018

The model delineates trips to and from the stations based on their arrival mode: walk, bus/shuttle, park-and-ride, and kiss-and-ride. For the latter two modes, Gold Line passengers would arrive at the station by automobile. **Table 4** is a summary of daily automobile trips to and from each proposed station. The daily automobile trips include the sum of park-and-ride and kiss-and-ride modes of access to the stations. For the Pomona, Claremont, and Montclair stations, the automobile access would be for both Metro Gold Line and Metrolink service because they share facilities at these stations.

Table 4: Daily Automobile Trips

Daily Automobile Trips			
Station	Build Alternative	Build Alternative Phase 1	Build Alternative Phase 2
Glendora	364	370	362
San Dimas	362	378	381
La Verne	373	430	408
Pomona	1,081	1,180	1,150
Claremont	856	-	937
Montclair	1,853	-	-
Total	4,889	2,358	3,239

Source: AECOM, 2020; WSP 2018

3. Parking

The parking demand forecasted for SEIR 2 was retained for the Project Modification analysis. No changes to the parking demand are expected as a result of the Project Modification. The number of parking spaces are assumed to be the same for SEIR 2 and Project Modification.

For SEIR 2, the Metro travel demand model was also used to estimate parking demand, which was also applied for the Project Modification analysis. **Table 5** is a summary of the parking demand and parking supply at each proposed station.

Table 5: Parking Demand and Parking Supply of Approved Project

Station	Build Alternative		Build Alternative Phase 1		Build Alternative Phase 2	
	Daily Parking Demand	Parking Supply	Surplus/Deficit	Daily Parking Demand	Parking Supply	Surplus/Deficit
Glendora	288	302	292	302	287	302
San Dimas	284	289	275	289	287	289
La Verne	296	299	303	299	313	299
Pomona	539	550	545	550	556	550
Claremont	542	539	-	-	561	539
Montclair	1,521	1,600	-	-	-	-
Total	3,471	3,579	1,415	1,440	2,005	1,979

Source: AECOM, 2020; WSP 2018

4. Traffic Operations Analysis Results

4.1 Level of Service Analysis

Tables 6 and 7 are summaries of the delay and LOS for four scenarios:

- the original 2013 FEIR Build Alternative
- 2019 Supplemental EIR (SEIR 1)
- 2021 Supplemental EIR (SEIR 2)
- Supplemental EIR (SEIR 3)

As summarized in Tables 6 and 7, all Project Modification study intersections are projected to operate at an acceptable LOS (D or better) in the AM and PM peak hours. Detailed LOS worksheets for the Build Alternative with the Project Modification are provided in **Attachment B**.

Table 6: Comparison of 2013 FEIR, 2013 FEIR with Model Updates, SEIR 2, and SEIR 3 for AM Peak Hour Intersection Operations

Number	Study Area Intersection	Control	2013 FEIR Approved Project		2013 FEIR Approved Project with Model Updates		SEIR 2 Approved Project		SEIR 3	
			LOS	Delay ^a	LOS	Delay ^a	LOS	Delay ^a	LOS	Delay ^a
38	San Dimas Avenue / Bonita Avenue	S	B	12.2	C	20.6	C	20.7	C	20.7
39	San Dimas Avenue / Arrow Highway	S	C	34.1	D	35.2	C	34.5	D	38.2
40	Walnut Avenue / Bonita Avenue	S	A	6.8	B	12.1	B	12.1	B	12.2
41	Walnut Avenue / Arrow Highway	S	B	13.5	C	21.7	C	21.8	C	21.8
202	San Dimas Avenue / Railway Street	U								
203	San Dimas Avenue / Commercial Street	U/S								

Notes:

-Shaded cells are shown for that were only evaluated in the higher volume PM peak period.

^a Delay is reported in seconds per vehicle using HCM 2000 methodologies for signalized and unsignalized intersections.

S = Signalized

U = Unsignalized

U/S = an intersection that is unsignalized for the No Build and will be signalized as part of the Approved Project and/or Project Modification.

Table 7: Comparison of 2013 FEIR, 2013 FEIR with Model Updates, SEIR 2, and SEIR 3 for PM Peak Hour Intersection Operations

Number	Study Area Intersection	Control	2013 FEIR Approved Project		2013 FEIR Approved Project with Model Updates		SEIR 2 Approved Project		SEIR 3	
			LOS	Delay ^a	LOS	Delay ^a	LOS	Delay ^a	LOS	Delay ^a
38	San Dimas Avenue / Bonita Avenue	S	B	19.2	C	28.4	C	28.5	C	28.5
39	San Dimas Avenue / Arrow Highway	S	D	48.3	D	41.6	D	41.4	D	42.9
40	Walnut Avenue / Bonita Avenue	S	B	14.4	B	15.5	B	15.5	B	15.5

Table 7: Comparison of 2013 FEIR, 2013 FEIR with Model Updates, SEIR 2, and SEIR 3 for PM Peak Hour Intersection Operations

Number	Study Area Intersection	Control	2013 FEIR Approved Project		2013 FEIR Approved Project with Model Updates		SEIR 2 Approved Project		SEIR 3	
			LOS	Delay ^a	LOS	Delay ^a	LOS	Delay ^a	LOS	Delay ^a
41	Walnut Avenue / Arrow Highway	S	B	12.9	C	20.5	B	19.7	B	18.0
202	San Dimas Avenue / Railway Street	U			A	3.6	A	3.6	B	11.3
203	San Dimas Avenue / Commercial Street	U/S			A	3.0	A	3.0	A	7.5

Notes:

-Shaded cells are shown for intersections that were only evaluated in the higher volume PM peak period.

^a Delay is reported in seconds per vehicle using HCM 2000 methodologies for signalized and unsignalized intersections.

S = Signalized

U = Unsignalized

U/S = an intersection that is unsignalized for the No Build and will be signalized as part of the Approved Project and/or Project Modification.

4.2 Impact Analysis

Using the Los Angeles County thresholds, the Project Modification study intersections were compared to the No Build scenario to identify locations with potential impacts. **Tables 8 and 9** provide summaries of AM and PM peak hour conditions for the Project Modification and No Build scenarios. None of the intersections were identified as having potential impacts with the Project Modification in the AM and PM peak hours.

5. Additional Evaluations

The Project Modification are not expected to change the analysis for the planned long-term mitigation strategies included in SEIR 2. None of the study intersections were identified in the long-term mitigation strategies. Therefore, there are no changes to the results of the analysis.

Table 8: AM Peak Hour Intersection Impacts Summary

Number	Intersection Name	Control	Jurisdiction	No Build ^c		2013 FEIR Approved Project		2013 FEIR Approved Project (with updated model)		SEIR 3 Project Modifications		Change in Delay (vs. Model Updated No Build) ^b	Change in Delay (vs. Model Updated No Build) ^b	Change in Delay (vs. Model Updated Approved Project)	Approved Build vs. No Build Original Impact? ^c	SEIR 3 Project Modifications (vs. Model Updated No Build) ^{b,c}
				LOS	Delay ^a	LOS	Delay ^a	LOS	Delay ^a	LOS	Delay ^a	2013 FEIR Updated	SEIR 3 Project Modifications			
38	San Dimas Ave / Bonita Ave	S	San Dimas	C	25.5	B	12.2	C	20.6	C	20.7	-4.9	-4.8	0.1	NO	NO
39	San Dimas Ave / Arrow Hwy	S	San Dimas	D	36.6	C	34.1	D	35.2	D	38.2	-1.4	1.6	3.0	NO	NO
40	Walnut Ave / Bonita Ave	S	San Dimas	B	11.8	A	6.8	B	12.1	B	12.2	0.3	0.4	0.1	NO	NO
41	Walnut Ave / Arrow Hwy	S	San Dimas	C	21.5	B	13.5	C	21.7	C	21.8	0.2	0.3	0.1	NO	NO
202	San Dimas Ave / Railway St	U/S	San Dimas													
203	San Dimas Ave / Commercial St	U/S	San Dimas													

- Notes:
- Shaded cells are shown for intersections that were only evaluated in the higher volume PM peak period.
 - ^a Delay is reported in seconds per vehicle using HCM 2000 methodologies for signalized and unsignalized intersections.
 - ^b No Build scenario results were reported from SEIR 2.
 - ^d Impact criteria based on County of Los Angeles thresholds.
- S = Signalized
 U = Unsignalized
 U/S = an intersection that is unsignalized for the No Build and will be signalized as part of the Approved Project and/or Project Modification.

Table 9: PM Peak Hour Intersection Impacts Summary

Number	Intersection Name	Control	Jurisdiction	No Build ^c		2013 FEIR Approved Project		2013 FEIR Approved Project (with updated model)		SEIR 3 Project Modifications		Change in Delay (vs. Model Updated No Build) ^b	Change in Delay (vs. Model Updated No Build) ^b	Change in Delay (vs. Model Updated Approved Project)	Approved Build vs. No Build Original Impact? ^d	SEIR 3 Project Modifications (vs. Model Updated No Build) ^{b,c}
				LOS	Delay ^a	LOS	Delay ^a	LOS	Delay ^a	LOS	Delay ^a	2013 FEIR Updated	SEIR 3 Project Modifications			
38	San Dimas Ave / Bonita Ave	S	San Dimas	D	40.4	B	19.2	C	28.4	C	28.5	-12.0	-11.9	0.1	NO	NO
39	San Dimas Ave / Arrow Hwy	S	San Dimas	D	39.9	D	48.3	D	41.6	D	42.9	1.7	3.0	1.3	NO	NO
40	Walnut Ave / Bonita Ave	S	San Dimas	B	15.1	B	14.4	B	15.5	B	15.5	0.4	0.4	0.0	NO	NO
41	Walnut Ave / Arrow Hwy	S	San Dimas	B	18.0	B	12.9	C	20.5	B	18.0	2.5	0.0	-2.5	NO	NO
202	San Dimas Ave / Railway St	U/S	San Dimas	C	15.6			A	3.6	B	11.3	-12.0	-4.3	7.7		NO
203	San Dimas Ave / Commercial St	U/S	San Dimas	C	18.1			A	3.0	A	7.5	-15.1	-10.6	4.5		NO

- Notes:
- Shaded cells are shown for intersections that were only evaluated in the higher volume PM peak period.
 - ^a Delay is reported in seconds per vehicle using HCM 2000 methodologies for signalized and unsignalized intersections.
 - ^b No Build scenario results were reported from SEIR 2.
 - ^c Impact criteria based on County of Los Angeles thresholds.
 - = Signalized
 - U = Unsignalized
 - U/S = an intersection that is unsignalized for the No Build and will be signalized as part of the Approved Project and/or Project Modification.



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